AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-15. (Cancelled).

16. (Currently amended) Method for determining chromatic dispersion of a sample comprising:

generating an electromagnetic beam of radiation comprising at least two various wavelengths;

splitting the beam into a reference beam and a measurement beam to ~~radiograph~~ irradiate the sample;

superimposing the reference beam and the measurement beam thereby forming an interference beam;

measuring wavelength-dependent power changes and polarization changes of the interference beam by means of a polarimeter; and

determining the chromatic dispersion of the sample on the basis of the power changes and the polarization changes,

where ~~the measuring is done by a polarimeter~~ two orthogonal states of polarization for determining the power changes are selected using said polarimeter so that power from reference arm of interferometer apparatus is broken down into virtual partial powers of approximately the same magnitude.

17. (Cancelled).

18. (Previously Presented) Method according to claim 16 where the electromagnetic beam is generated by a tunable laser.

19. (Cancelled).

20. (Previously Presented) Method according to claim 16 where the chromatic dispersion is determined from wavelength-dependent Stokes parameters by reference scan and measurement scan.

21. (Cancelled).

22. (Previously Presented) Method according to claim 18 where the chromatic dispersion is determined from wavelength-dependent Stokes parameters by reference scan and measurement scan.